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Bliss off the grid by 2015?

- Post to test renewable power sources
- Defense Dept. wants 'energy security'

By Robert Gray



The U.S. Army has embraced renewable energy. Is the green movement behind it? Nope. It's all about the Department of Defense's massive energy tab and national security – the DOD is calling it "energy security."

Fort Bliss is the first military post in the nation to be designated a Center for Renewable Energy, which means more federal funding and private sector investment here.

"Fort Bliss is the test bed for addressing energy security," says Douglas Dahle with the U.S. Department of Energy's National Renewable Energy Laboratory. "It is one of the most critical bases in the Department of Defense."

By 2015, Dahle said, solar power, geothermal power and a waste-to-energy facility on Fort Bliss could provide enough power for the base to operate completely independent of the local power grid.

That investment in renewable energy here, Dahle said, could total about \$400 million.

Col. Edward Manning, garrison commander of Fort Bliss, said he wasn't so optimistic but declined to comment on when Bliss might be energy independent.

Defense officials now consider reducing energy consumption a national security issue.

Energy security, Dahle said, basically means "we will have the power needed to do our mission come hell or high water."

Tiger team attacks

The first energy security report done by the Defense Department was completed on Fort Bliss in February by a "tiger team" – a group that tests the effectiveness of an organization's ability to protect itself by attempting to thwart its security.

According to the team's assessment, "Fort Bliss is ideally situated to generate renewable energy to meet mandated goals and will play a significant role in contributing to Army-wide performance."

Efforts to reduce energy consumption on Fort Bliss are already underway.

Maj. Gen. Howard Bromberg, commanding general of Fort Bliss, gets around base in a plug-in electric car. According to Manning, the car can't go faster than 30 miles per hour, but that's all Bromberg needs.

After all, the speed limit on post is never higher than 25.

“We are leading the effort,” U.S. Rep. Silvestre Reyes said at a renewable energy summit held on Fort Bliss Friday. “But much more needs to be done.”

The Defense Department, Dahle said, is the single largest energy consumer in the United States – by far.

The department’s total energy tab is \$13 billion a year.

Bliss pays an annual energy bill of about \$19 million, but that’s expected to spike to more than \$80 million by 2025, according to data collected by Fort Bliss officials.

“We certainly can’t do that,” said Manning. “We’ve got to do more and think outside the box if we are going to make this work.”

Going geothermal

That outside of the box thinking includes plans for geothermal, waste-to-energy and solar power plants.

In 1996, when test wells were dug, hot water measuring 170 to 190 degrees was discovered about five miles southeast of McGregor Range.

It would take \$80 million to \$120 million to build a geothermal power plant there, according to Dahle, that would produce 20 megawatts of electricity. That would be more than enough, Manning said, to make McGregor Range independent of the grid.

Then there’s garbage. Fort Bliss produces about 100 tons of waste per day. That, Dahle said, is enough to supply a waste-to-energy facility that would produce 6 megawatts of electricity. It would be a \$50 million investment.

City officials are looking for more landfill space to meet the city’s growing demand and Dahle said he is hoping the Army can work with the city to turn some of the city’s garbage into energy. That could boost the facility’s energy production to 30 megawatts.

The garbage is reduced by 90 percent and the byproduct is an inert ash.

As for the solar power plant, the plan is to use about 250 acres of parabolic mirrors to focus the sun’s rays into 50-foot high towers filled with a thick liquid. The hot liquid would flow through a heat exchanger that causes water to boil, creating steam, which turns a turbine that generates electricity.

That is expected to produce 15 megawatts of electricity.

Power partners

The federal government would partner with private companies to construct the various power plants, Dahle said. The government would provide the land, complete the required environmental impact studies and facilitate the connection to the grid.

He said they will probably seek proposals from the private sector for the projects in two years.

Fort Bliss is not alone. The Department of Defense is starting renewable energy projects at bases across the country.

At Fort Irwin, California officials hope to have the base off the power grid in five years. The Army is bidding out a project there to build a 500-megawatt solar project. Dahle said it will probably cover 3,000 to

4,000 acres.

The project at Fort Bliss is not without its challenges; one is distributing the power. Dahle said they are considering feeding the electricity into El Paso Electric's grid and negotiating a contract with the utility to receive the energy back. But that still leaves the post reliant on the city's grid, defeating the whole purpose of energy security.

The other option is "hugely expensive," Dahle said. Build the distribution system on post, creating Bliss's own power grid.